Opinion

UNITED STATES COURT OF APPEALS
FOR THE FOURTH CIRCUIT

No. 8186

ARC & GAS WELDER ASSOCIATES, INC., A Maryland Corporation, *Appellee*,

v.

THE GREEN FUEL ECONOMIZER CO., INC., a New York Corporation, and NATIONAL SURETY CORPORATION, a New York Corporation, *Appellants*.

APPEAL FROM THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF MARYLAND, AT BALTIMORE
ROSZEL C. THOMSEN, DISTRICT JUDGE

(Argued November 8, 1960. Decided December 30, 1960.)

Before SOPER and BOREMAN, Circuit Judges, and BRYAN, District Judge.

Byron N. Scott (Hilary W. Gans and Robert Day Scott on brief) for Appellant The Green Fuel Economizer Co., Inc.; John Henry Lewin (David C. Green, and Venable, Baetjer and Howard on brief) for Appellee, and William L. Marbury and Mathias J. DeVito on brief *amici curiae*.

SOPER, Circuit Judge:

This case concerns a dispute between a subcontractor and a sub-subcontractor as to which one of them was

obliged to do certain work in the performance of a government contract. Blount Bros. Construction Company, a co-partnership of the State of Alabama, the prime contractor, entered into a general contract with the United States, acting through the Department of the Army, on June 30, 1955, to construct two stainless steel cloud chambers in a biological laboratory at Camp Detrick, Frederick, Maryland. On July 28, 1955, Blount entered into a subcontract with the Green Fuel Economizer Company, Inc., a New York corporation, to construct and deliver the cloud chambers in accordance with the plans and specifications of the general contract. On August 24, 1956, Green entered into a sub-subcontract with Arc and Gas Welder Associates, Inc., a Maryland corporation, to do part of the work which Green had contracted to perform. This contract was later superseded by a contract of November 1, 1956, between the same parties which changed to some extent the work to be performed by Arc. The instant suit was brought by Arc against Green, claiming that it had performed the work specified by the contract between them and also certain extra work ordered by Green, but had not been paid for its services. The case was heard before the District Judge sitting without a jury and resulted in a judgment for Arc in the sum of $80,778.20, from which Green has appealed. The exhaustive opinion of the District Judge is found in 182 F. Supp. 648.

Cloud chambers are airtight rooms of stainless steel polished to a finish so smooth that there are no pits, cracks or crevices left in the walls in which germs may lurk after the chambers have been cleaned. Under the general contract the outer walls of the chambers were to be constructed of stainless steel plates 3/16th of an inch in thickness, welded together and supported by carbon steel structural beams tack-welded to the outside of the plates. Each chamber contained a vertical baffle to be constructed of welded stainless steel sheets and a horizontal baffle of welded stainless steel plates.

The principal questions arising under the contract between Green and Arc relate to the kind of polishing required to be done by the general contract and which one of the subcontractors, Arc or Green, was obligated to do it under the contract between them. The following provisions of the specifications annexed to the general contract pertain to the character of the finish to be given to the surfaces of the chambers and are particularly pertinent, since they throw light upon the meaning of the terms used in both contracts:

> "8-06 f. (1) All welds in the Cloud Chambers, Dissemination Room, Dressing Room E, and Air Lock No. 4 shall be ground smooth, and where No. 4 finish is hereinafter specified, shall be ground substantially flush with parent metal surfaces.
>
> "8.06 f. (3) Inside Cloud Chambers 'A' and 'B,' all stainless steel surfaces, including weld metal surfaces, shall be polished to a No. 4 finish without pits, cracks, or crevices. No. 4 finish shall include both faces and all exposed edges of baffle sheets and all exposed surfaces of baffle-supporting or reinforcing members.
>
> "8-06 j. *Final Polishing:* Immediately prior to completion of the contract work, stainless steel surfaces with No. 4 finish shall be given a final recheck for pits, cracks, and crevices, and a final polishing."

As stated in the opinion of the District Judge, 182 F. Supp. 654, the August contract between Green and Arc called for the following work to be done by Arc:

> "Complete erection, fabrication and testing of two (2) stainless steel cloud chambers in accordance with drawings (as per rider attached)."

The rider listed the drawings and, under the heading "Work," contained three paragraphs, two of which were

identical with those quoted below from the rider to the November contract. The third paragraph read as follows:

> "Polishing of the welds is not a portion of this sub-contract."

The August contract in fact did not require Arc to do any polishing and the stated consideration of $33,000 did not include any amount for polishing.

This contract was superseded by a contract between the same parties on November 1, 1956, which contained the following provisions describing the work to be done by Arc:

> "Article I—Sub-contractor (Arc) shall furnish all labor and materials and perform all work necessary to complete the following part or parts of the work of the General Contract in all respects as is therein required of the Contractor, and all work incidental thereto, namely:
>
> Complete erection, fabrication, testing, and polishing of two (2) Stainless Steel Cloud Chambers in accordance with drawings (as per rider attached)."

* * * * * * * * * *

> "Article IV—Sub-contractor shall make all alterations, furnish the material for and perform all extra work or omit any work owner or contractor may require without nullifying this agreement as a reasonable addition to or deduction from the sub-contract price hereinafter named and pro rata to the same. No changes are to be made, however, except upon written order from the Contractor and the Contractor shall not be held liable to Sub-contractor for any extra labor, materials, or equipment furnished without such written order."

* * * * * * * * * *

> "Article XV—The provisions of the attached rider complement and are a part of the printed contract."

The rider provided as follows:

"*Work*

1. All rigging work, erection, and welding necessary. Testing work necessary to make a complete and satisfactory job in accordance with the aforementioned drawings, plans, and specifications.

2. It is understood and a part of this subcontract that the structural steel backing for the stainless steel plates will be delivered prefabricated and polished in accordance with the aforementioned drawings.

3. Polishing of the welds is a part of this contract. All surfaces welded to be polished to a No. 4 finish with a maximum roughness finish tolerance allowable of 42 micro-inches."

The controverted questions relating to the respective duties of Arc and Green to polish the surfaces of the cloud chambers were not decided by the District Judge solely upon the terms of the written contracts. A great mass of testimony was taken in which the meaning of the terms was explained and additional oral agreements between Arc and Green were proved. When the contract of August 24, 1956, between Arc and Green was first offered in evidence, Green objected on the ground that the contract in suit was the later contract of November 1, 1956, but the court received the earlier contract in evidence and also additional evidence extrinsic to the contracts for the stated reason that the contracts were unclear in certain respects and hence additional evidence would be received with the right of the parties to move to strike the evidence before the court announced its final findings of fact. The ambiguities or uncertainties to which the judge referred related in part to the term "No. 4 finish" used in the documents and in part to what share of the work was to be done by Green and what share by Arc. On this appeal it

is argued that the evidence should not have been received because the Arc-Green contract incorporated by reference the provisions of the Blount-Green contract with its riders, drawings, and specifications so that the two contracts constituted an integrated whole from which the respective obligations of Green and Arc should be ascertained in accordance with the rules laid down in the Restatement of Contracts §§226, 227 and 230, and 3 Williston on Contracts §§538 and 539, and in *Insley* v. *Meyers,* 192 Md. 292.

It is however, quite obvious that extrinsic testimony was required in this case. It is conceded by the appellant that the descriptive term No. 4 finish has no dictionary definition, and a large part of the testimony was therefore taken to ascertain the meaning given to the term in the industry in connection with the polishing of steel plates. The phrase relates to the surface smoothness to be given to the material which may be measured in micro-inches as, for example, a smoothness which does not exceed 42 micro-inches, which reveals no visible pits, cracks or crevices upon the surface. Green contends that (as used in the trade) a No. 4 finish does not possess such a high degree of smoothness as that and that its obligation under the contract with Arc was limited to the delivery of steel plates having only a No. 4 finish, whereas it was Arc's duty upon the delivery of the plates to polish them so that there would be no pits, cracks or crevices in the completed structure as required by the general contract. In this connection, Green points out that in the specifications of the general contract the term No. 4 finish is sometimes used alone and sometimes with the accompanying phrase "without pits, cracks or crevices", and hence draws the inference that the two phrases are not synonymous. The finding of the District Judge to the contrary on this point is set out in the following excerpts from his opinion (182 F. Supp. 651, 655):

"Underlying Facts

. . . . . .

"(2) *No. 4 Finish*

Surface finishes on stainless steel sheet and plate are commonly sold by number designations, e.g. No. 1 finish, No. 4 finish, and No. 7 finish, the higher numbers indicating smoother finishes. They are not customarily sold in terms of a measurable smoothness in micro-inches. No. 1 finish, sometimes called "mill finish", is not polished at all. The leading steel mills regularly produce and sell stainless steel sheet and plate designated as having a No. 4 finish.

"It is understood in the industry that a No. 4 finish is a finish arrived at by grinding the surface of the plate or sheet with coarse abrasives and then polishing the surface with abrasives no coarser than 120 grit. Some mills use an even finer grit, but 120 grit is standard. While the various mills do not achieve precisely the same surface smoothness for all No. 4 finish and do not ordinarily produce or sell No. 4 finish in terms of a micro-inch measure or other specific measure of surface smoothness, the No. 4 finishes produced and sold by the various reputable mills fall within a range of surface smoothness which does not exceed 42 micro-inches. It is also recognized in the industry that to qualify as a No. 4 finish the surface of the plate must have no pits visible to the naked eye, and that all such pits are to be removed in the grinding and polishing operations necessary to produce a merchantable No. 4 finish.

"There is no material difference between a No. 4 finish on plate that has been polished to that finish by a mill and on plate that has been polished to that finish in the field, except that field-polished plate may be streaked in appearance. Nor is there any material difference between a No. 4 finish on stainless steel plate and a No. 4 finish on stainless steel sheet, although they may not look the same at a casual glance."

* * * * * * * * * * *

"Upon consideration of all the evidence, and weighing the credibility of the several witnesses, I find that the subcontract between Arc and Green was not intended to require Arc to do the final polishing or any other polishing necessary to create a No. 4 finish, without pits, cracks and crevices on the plates furnished by Ryerson."

This finding of the District Judge was adequately supported by the evidence detailed in his opinion and hereinafter referred to, and it follows that if Green had complied with its obligation to deliver to Arc stainless steel plates with a No. 4 finish, as defined in the judge's opinion, they would have possessed the smoothness required by the general contract and Arc would have had no occasion to polish them.

The ambiguity or uncertainty in respect to the character of polishing required by the general contract justified the taking of the evidence referred to, and there were also ambiguities in the Arc-Green contract which required additional testimony in order to ascertain the respective obligations of the parties. It will have been noticed that the August contract between Green and Arc contained the express provision that polishing of the welds was not a portion of the subcontract, whereas the third paragraph of the rider attached to the contract of November 1, 1956, between the same parties contained the express provision that polishing of the welds was a part of this contract. Uncertainty arises in this connection as to whether the insertion of this provision in the later contract indicates that Arc was to polish only the welds or was also to polish the stainless steel surfaces.

Moreover, the rider to the Arc-Green contract of November 1, 1956, is also ambiguous in its second paragraph. It provides that "the structural steel backing for the stainless steel plates will be delivered prefabricated and polished in accordance with the aforementioned drawings", but it does

not state clearly whose duty it is to make the delivery and hence it might be contended that this was included in Arc's obligation. It is however conceded by Green, and it is shown by the testimony, that Green had the obligation to deliver not only the structural steel backing but also the stainless steel plates for the walls of the chambers, although by a mistake of the draftsman the plates themselves were not mentioned at all in the rider. Hence it is quite clear that the taking of testimony extrinsic to the documents was justified.

Upon an examination of the contracts and the additional testimony, which is adequately set out in the opinion of the District Judge, we are convinced that he was correct in his finding as to the meaning of the term "No. 4 finish" and also in his conclusion that, except for the polishing of the welds, Arc was not required to polish the surfaces of the plates but that Green was obliged to deliver the plates in such condition that they would need no further polishing, and that Green was also obliged to do the final polishing and recheck for defects immediately prior to the completion of the work, which is required by §8-06j of the general contract but is not mentioned in the Arc-Green contract.

The testimony shows that in the industry a No. 4 finish means a smoothness which does not exceed 42 micro-inches, resulting in a surface without pits. This was brought out by investigations of the parties prior to making the subcontract, communications between the representatives of Green, Arc, Blount and the United States before and after the contract was signed, and by the testimony of experts. Bearing this finding in mind, it is plain that there is no room for the argument of the appellant that the parties to the general contract, by using the term No. 4 finish without the accompanying words, contracted for a finish less exacting than that contemplated by the usage of the industry. It is true that the parties to a contract may exclude from the agreement the application of a usage by contracting upon

different terms, Restatement of Contracts §247, *Appelman* v. *Fisher*, 34 Md. 540 and *Appelstein* v. *Royal Realty Corp.*, 181 Md. 171; but in the pending case the parties used terms which had a definite meaning in the industry and may not now be heard to say that they did not use the terms as the industry understood them.

We come then to the second important conclusion of the District Judge that Green was obliged, under the contracts, to polish the plates. In this connection, Green contends that the duty rested upon Arc because of the provisions of the Arc-Green contract, set out above, which require Arc to complete the following parts of the work of the general contract "and all work incidental thereto, namely, complete erection, fabrication testing and polishing of two stainless steel cloud chambers in accordance with the drawings (as per rider attached)." Were it not for the rider Arc's duty to polish the walls would be clear but the second paragraph of the rider, as Green concedes, requires Green to furnish the plates polished to a No. 4 finish in accordance with the general contract, and the third paragraph contains the sentence which, in express terms, seems to limit Arc's duty to the polishing of the welds only. Whatever doubt may be occasioned by these provisions is cleared up by weighty evidence which supports the conclusion that Arc was not required to polish the plates.

The general contract required the steel plates to be welded together so as to constitute the walls of the chambers. Arc was originally employed because its personnel was expert in welding although it had no knowledge of polishing steel plates. Doubtless for this reason, the polishing of the welds, a necessary step in producing a smooth surface of the interior walls, was expressly declared in the August contract not to be an obligation of Arc. Under the November contract, however, after representatives of Arc and Green visited various plants to learn how welds were polished, polishing of the welds was expressly included and the amount to be paid to Arc was increased by the

sum of $16,000. Green contends that the new work to be done under the November contract included all of the polishing, but the evidence clearly indicates that the added compensation of $16,000 was so much less than the cost of polishing all the surfaces that it could not reasonably have included this work. The District Judge, in determining the fair value of Arc's work in order to arrive at the amount of the verdict, reached the conclusion, upon all of the evidence, that the polishing of 13,437 square feet of plate surface, including the removal of the paper attached to the plates, when delivered, was worth $46,255.69 for labor alone, exclusive of profit and the cost of supervision.

Green itself recognized that the additional compensation of $16,000 agreed upon in the November contract was insufficient to pay for polishing the interior surfaces as well as the welds and entered into an oral agreement to pay Arc for polishing the plates as extra work when upon the delivery of the plates it was found that they were so far below the requirements of the general contract that additional polishing was necessary. Green, however, now contends that Arc's claim for extra work should be rejected because the orders for it were not in writing, as required by the Arc-Green contract. But it is clear, as the District Judge held, 182 F. Supp. 662, that Green waived the requirements of the contract in this respect in various ways, including the making of payments without formal written orders on other items of extra work and by statements made in correspondence between the parties. See *Freeman* v. *Sandbern Const. Co.*, 205 Md. 71, 79.

Moreover, Green went on record about this time as to the extent of Arc's obligation to polish when he wrote to the supplier of the steel plates complaining of the pits and crevices in the surface. He said, as the District Judge points out, 182 F. Supp. 660:

> "In order to remove these pits, our contractor has had to weld them shut and grind and repolish the sur-

face. This has caused considerable extra work for our contractor, Arc & Gas Welder Associates, Baltimore. Their contract with us calls for grinding and polishing of the weld area. These pits occur most anywhere in the plates."

Green makes the additional argument that the court allowed an excessive amount for the extra work. The welding operations were accompanied by some discoloration and impairment of the mill finish of the plates—burn spots—and some scratches and dents in the surface of the plates were incurred during the storage of the plates, the removal of the paper and the erection. Green claims that these defects were due to bad workmanship on the part of Arc and hence it should not have been allowed any compensation for the extra work in remedying them. The argument is not tenable, since it was shown that the welding and the care of the plates were performed with due care and that the scratches and dents caused by the removal of the paper glued to the plates when they were delivered were caused by the unusual kind of paper used. In any event, these defects did not increase the cost of bringing the plates to the required polish, since the plates delivered by Green were below the contract requirements and the work needed to bring them up to standard would also have removed the defects which occurred during the erection of the chambers.

The judgment of the District Court is affirmed.

Affirmed.

Judgment

(Filed and Entered December 30, 1960)

UNITED STATES COURT OF APPEALS
FOR THE FOURTH CIRCUIT

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APPEAL FROM the United States District Court for the District of Maryland.

THIS CAUSE came on to be heard on the record from the United States District Court for the District of Maryland, and was argued by counsel.

ON CONSIDERATION WHEREOF, it is now here ordered and adjudged by this Court that the judgment of the said District Court appealed from, in this cause, be, and the same is hereby, affirmed with costs.

MORRIS A. SOPER
United States Circuit Judge

HERBERT S. BOREMAN
United States Circuit Judge

ALBERT V. BRYAN
United States District Judge

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF MARYLAND

Filed April 7, 1960

Opinion

THOMSEN, Chief Judge:

These consolidated cases arise out of the construction of a biological laboratory at Fort Detrick, Frederick, Maryland. The Corps of Engineers, Department of the Army, was in charge of the construction. The laboratory includes two "cloud chambers", air-tight rooms of stainless steel, polished to so smooth a finish that there are no pits, cracks or crevices in which germs may lurk after the cloud chambers have been emptied and cleaned from time to time.

The general contract for the laboratory was let to Blount Brothers Construction Company (Blount), which subcontracted the furnishing of all work and materials for the cloud chambers to Green Fuel Economizer Company, Inc. (Green). Green, in turn, ordered the steel from Ryerson Steel Company (Ryerson), and contracted with Arc & Gas Welder Associates, Inc. (Arc) to do the welding, fabricating, erecting and testing, and to polish the welds.

Gordon, who was in charge of the cloud chamber job for Green, was continually scheming to develop claims for extra work against Blount and the Government. He also induced Knief, the president and sole stockholder of Arc, who was inexperienced and unsophisticated, to do a great deal of polishing which was not required of Arc by its sub-subcontract with Green, but was required of Green by its subcontract with Blount. The work was finally com-

pleted, at great cost to Arc. The consolidated cases, which have been tried before the court without a jury, involve:

I. (A) Claims by Arc against Green

(1) for the retained percentage,

(2) for additional work, principally polishing, ordered by Green, or made necessary by the condition of the steel plates purchased by Green from Ryerson, or for which Green would be otherwise liable.

(B) Claims by Arc against Blount and its Surety

(1) for work ordered by Blount, and

(2) under the Miller Act, for the same items embraced in Arc's claims against Green, I.(A)(1) and (2).

II. (A) Claims by Green against Blount and Blount's Surety

(1) for the retained percentage,

(2) the so-called "plate claim", and

(3) the so-called "polishing claim", which is chiefly an indemnity claim for any amount payable by Green to Arc under I.(A)(2).

(B) Claim by Green against Blount for wilful interference with and malicious failure to convey certain information to Green.

(C) Claim by Green against Arc and Arc's Surety for delay.
This claim was dismissed with prejudice by Green as against Arc's Surety during the trial, without any payment to Green by Arc's Surety.

(D) A claim by Green against Ryerson was part of the case until shortly before the trial, when it was dismissed by Green with prejudice. There is nothing in the record to show what, if anything, Ryerson paid to obtain this dismissal.

III. Claims by Blount against Green and Green's Surety

(A) for delays chargeable to Green,

(B) for exoneration from and indemnity against Arc's Miller Act claim against Blount, I.(B)(2), above, and

(C) for counsel fees.

In addition to the contracts, plans, specifications, physical exhibits, records, bills, computations, etc., the parties offered hundreds of letters and over 2,000 pages of testimony. Arc, Green and Blount have each submitted over fifty proposed findings of fact, many very elaborate, some covering several typewritten pages. It is impractical to rule on all the proposed findings; the important facts are set out below in the two major sections of this opinion, headed "Underlying Facts" and "Findings of Fact and Conclusions of Law on the Several Claims".

Underlying Facts

(1) *The General Contract (U.S.-Blount)*

On June 30, 1955, Blount entered into a general contract with the Corps of Engineers to construct a biological laboratory, including two cloud chambers, at Fort Detrick, Maryland, for the Chemical Corps (the Using Agency). As required by the Miller Act, 40 U.S.C.A. 270a, Blount furnished a payment bond, with United States Fidelity and Guaranty Company (U.S.F. & G.) as surety, in the penalty of $1,677,700.

The outer walls of the cloud chamber were to be constructed of stainless steel plates, 3/16ths of an inch thick,

welded together, and supported by carbon steel structural beams tack-welded to the outside of the plates. Each cloud chamber contained a vertical baffle, to be constructed of welded stainless steel sheets,[1] and a horizontal baffle, of welded stainless steel plates.

The following provisions of the specifications are particularly pertinent:

> "8-06 f. (1) All welds in the Cloud Chambers, Dissemination Room, Dressing Room E, and Air Lock No. 4 shall be ground smooth, and where No. 4 finish is hereinafter specified, shall be ground substantially flush with parent metal surfaces."
>
> "8-06 f. (3) Inside Cloud Chambers 'A' and 'B', all stainless steel surfaces, including weld metal surfaces, shall be polished to a No. 4 finish without pits, cracks, or crevices. No. 4 finish shall include both faces and all exposed edges of baffle sheets and all exposed surfaces of baffle-supporting or reinforcing members."
>
> "8-06 j. *Final Polishing:* Immediately prior to completion of the contract work, stainless steel surfaces with No. 4 finish shall be given a final recheck for pits, cracks, and crevices, and a final polishing."

(2) *No. 4 Finish*

Surface finishes on stainless steel sheet and plate are commonly sold by number designations, *e.g.* No. 1 finish, No. 4 finish, and No. 7 finish, the higher numbers indicating smoother finishes. They are not customarily sold in terms of a measurable smoothness in micro-inches. No. 1 finish, sometimes called "mill finish", is not polished at all. The leading steel mills regularly produce and sell stainless steel sheet and plate designated as having a No. 4 finish.

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[1] In the steel industry, thicknesses of 3/16" and greater are know as "plate", and thicknesses of less than 3/16" as "sheet".

It is understood in the industry that a No. 4 finish is a finish arrived at by grinding the surface of the plate or sheet with coarse abrasives and then polishing the surface with abrasives no coarser than 120 grit. Some mills use an even finer grit, but 120 grit is standard. While the various mills do not achieve precisely the same surface smoothness for all No. 4 finish and do not ordinarily produce or sell No. 4 finish in terms of a micro-inch measure or other specific measure of surface smoothness, the No. 4 finishes produced and sold by the various reputable mills fall within a range of surface smoothness which does not exceed 42 micro-inches. It is also recognized in the industry that to qualify as a No. 4 finish the surface of the plate must have no pits visible to the naked eye, and that all such pits are to be removed in the grinding and polishing operations necessary to produce a merchantable No. 4 finish.

There is no material difference between a No. 4 finish on plate that has been polished to that finish by a mill and on plate that has been polished to that finish in the field, except that field-polished plate may be streaked in appearance. Nor is there any material difference between a No. 4 finish on stainless steel plate and a No. 4 finish on stainless steel sheet, although they may not look the same at a casual glance.

(3) *The Subcontract (Blount-Green)*

On July 28, 1955, Blount entered into a subcontract with Green, in which Green agreed that it would furnish all labor, materials, equipment, etc., and would perform all work necessary to furnish, erect and complete two stainless steel cloud chambers in all respects as was required of Blount by the general contract, including the plans and specifications.

With certain limitations, the contract documents allowed the contractor to choose the details of the method of fabrication and erection.

It was agreed, however, that all work would be done under the direction of the Corps of Engineers, which was designated as the Engineer and/or Architect, and that its decision as to the true construction and meaning of the drawings and specifications would be final.

Green agreed to prosecute its work efficiently and promptly, and not to delay the work carried on by Blount or by other subcontractors. If Green was delayed by Blount, Green would be entitled only to an extension of time.

During the course of the work, progress payments were to be made by Blount to Green based upon estimates made by the Corps of Engineers, with the option in Blount to retain 10% of each estimate until final settlement and to withhold payment of any estimate until Green furnished suitable evidence that it had paid in full for all labor, materials and supplies used in its work through the date of the estimate.

Green and National Surety Corporation (National) executed and delivered to Blount a surety bond guaranteeing that Green would perform the subcontract and all duly authorized modifications thereof, and would make prompt payment to all persons furnishing labor, services and materials for use in the prosecution of the work covered by said contract.

(4) *Developments through May, 1956.*

Before entering into the subcontract with Blount, Green had solicited and received proposals from several steel mills for furnishing mill-polished plate having a No. 4 finish; after entering into the subcontract, Green placed an order with Armco Steel Corporation for such plate.

On November 11, 1955, Green entered into an agreement with Donald F. Gordon, under which Gordon took full charge of the administration of the subcontract with Blount and was to receive any profit made thereon. Shortly thereafter, that agreement was superseded by an arrangement whereby Gordon still had full charge of the adminis-

tration of the subcontract, but was to be compensated by a salary from Green. On December 7, 1955, Gordon canceled the Armco order, telling an officer of Green that he preferred to purchase the polished plates from Eastern Stainless Steel Corporation rather than from Armco.

Gordon considered various methods of performing the work; *e.g.*, he considered the possibility of purchasing plate with a No. 1 finish, to be polished in the field rather than at the mill, but abandoned that idea.

In January 1956, Gordon proposed to furnish plates having a so-called "pack-roll" finish as a substitute for plates polished to a No. 4 finish. Green offered to reduce the contract price by $370 if permitted to make this substitution. Permission was refused by the Corps of Engineers, one of the reasons for the refusal being that the removal of the pits inherent in pack-roll plate would require such extensive grinding that the plate would be less than the specified 3/16" thick in some areas. The Resident Engineer wrote Blount: "You are requested, therefore, to make this installation of stainless steel polished to a #4 finish. Representative samples of the finish to be furnished should be forwarded to this office immediately." Blount transmitted a copy of the letter to Green and asked Green to submit samples "with the No. 4 finish." Blount's superintendent, Messigner, said: "As you know, there is (sic) no 2 manufacturers that agree on what a No. 4 finish is". (However, I have found, Underlying Facts (2), *supra*, that a No. 4 finish *does* have a definite meaning in the steel industry.)

Later, Gordon proposed the use of "pack-roll" plates, to be polished to a No. 4 finish in the field, and submitted a sample, but admitted that it would not be possible to duplicate that finish exactly in the field.[2] The Corps of Engi-

[2] It is noteworthy that no more than a month before submitting that sample, Gordon had given instructions to abandon preparation of working shop drawings calling for the use of pack-roll plates, and to prepare working shop drawings calling for the use of mill-polished plates.

neers examined the sample submitted by Green and found that it measured about 55 micro-inches and that it had many pits. Therefore, on May 14, 1956, the Resident Engineer wrote Blount rejecting the sample, and said that "a surface finish similar or equal to that provided by the United States Steel Corporation as their stock No. 4 finish is considered acceptable by the Using Agency." The United States Steel Corporation does not advertise a "stock No. 4 finish". However, the adjective "stock" was evidently used by the Resident Engineer to mean regular or standard, and it is clear that U.S. Steel regularly advertised and sold a standard No. 4 finish similar to the No. 4 finish sold by other mills, *i.e.* a finish achieved by polishing with 120 grit, and without pits visible to the naked eye.

On May 15, Blount wrote Green, enclosing a copy of the May 14 letter from the Corps of Engineers and saying: "It is very important that you submit to this office another sample that you think is equal to U. S. Steel Corporation's stock No. 4 finish."

Meanwhile, on May 3, Green had requested a quotation from Ryerson Steel Company on mill-polished plate with a No. 4 finish; the request for such quotation stated that it was a "revised and final" plate list. On May 8, Ryerson sent Green the requested quotation. After receipt of Blount's letter of May 15, Green, without protest to Blount or to the Corps of Engineers, placed an order with Ryerson for the plates, on the basis of the quotation previously obtained. Green added the following note to its order: "Corps of Engineers has attached memo to recent correspondence requesting a No. 4 finish comparable to 'U. S. Steel Corporation Stock No. 4 Finish'. This will apply to this order." The addition of this note did not increase the price which Ryerson charged Green. Ryerson, in turn, ordered from Allegheny-Ludlum Steel Co. mill-polished plates having a No. 4 finish "equivalent" to United States Steel Corporation's stock No. 4 finish, and that order was accepted in June, 1956. Ryerson later certified that the plates had a No. 4 finish, although in fact they did not have a No. 4 finish.

(5) *The Sub-subcontract (Green-Arc)-Summer 1956 to November 1956.*

Royal R. Knief was a distributor of welding machines, appliances and materials. He had formerly been a welder, and had conducted a welders' trade school, teaching both the sigma and the heliarc welding processes. He had never undertaken a welding contract, but was interested in obtaining such contracts and had discussed the matter with representatives of Green.

A welder named Karl had answered one of Green's advertisements for a welding foreman, and during the summer of 1956 Gordon negotiated first with Karl and then with Karl and Knief with the intention of having one or both of them undertake the welding, erection and testing of the cloud chambers. He also discussed with them the polishing of the welds, but neither Karl nor Knief had had any experience in this type of work. Little, if anything, was said at that time about the "final polishing" called for by section 8-06 j of the specifications, probably because no one thought this would be an important item. Knief knew that the tack-welding of the structural steel would necessarily cause burned spots which would have to be polished, however carefully and by whatever method the tack-welding was done, but he assumed they would be removed in the final polish. The negotiations finally resulted in a contract between Green and Arc, dated August 24, 1956, which was later superseded by a contract between the same parties, dated November 1, 1956. It was originally contemplated that the August contract be with Karl and Knief as associates, but for reasons not important in this case Knief undertook the contract alone, and organized the plaintiff corporation (Arc) in October 1956.

The August contract called for the following work to be done by Arc: "Complete erection, Fabrication and Testing of two (2) Stainless Steel Cloud Chambers in accordance with drawings (as per rider attached)." The rider listed the drawings and, under the heading "Work," contained

three paragraphs, two of which were identical with those quoted below from the rider to the November contract. The third paragraph read as follows: "Polishing of the welds is not a portion of this subcontract". The consideration stated in the August contract was $33,000. The calculation of that consideration did not include any amount for final polishing or any other polishing. At the time the August contract was executed Gordon had reached no decision as to who should do any of the polishing required by Green's subcontract with Blount, except the polishing at the mill to create the original No. 4 finish. The August contract between Green and Arc did not require Arc to do any polishing.

Between August and November, Knief and representatives of Green visited various plants to see how those plants polished welds. Finally, about November 1, Knief agreed, on behalf of Arc, to undertake the work of polishing the welds for $16,000 in addition to the $33,000 consideration provided for in the August contract. A sub-subcontract, dated November 1, 1956, between Green and Arc was prepared by Gordon and executed shortly after November 1. By that contract, for a consideration of $49,500,[3] Arc agreed to:

> "* * * furnish all labor and materials and perform all work necessary to complete the following part or parts of the work of the General Contract in all respects as is therein required of the Contractor, and all work incidental thereto, namely:
> "Complete erection, fabrication, testing and polishing of two stainless steel cloud chambers in accordance with drawings (as per rider attached)."

The printed portion of the contract contained the following Article: "The provisions of the attached rider complement

[3] No one could explain satisfactorily why the consideration was $49,500 rather than $49,000. Gordon knew that the additional consideration for the November contract was intended to cover only the polishing of the welds.

and are a part of the printed contract". The rider listed some 38 drawings and sketches by number and then, under the heading "Work", contained the following three paragraphs:

> "All rigging work, erection and welding necessary. Testing work necessary to make a complete and satisfactory job in accordance with the aforementioned drawings, plans and specifications.
>
> "It is understood and part of this subcontract that the structural steel backing for the stainless steel plates will be delivered prefabricated and polished in accordance with the aforementioned drawings.
>
> "Polishing of the welds is a part of this contract. All interior surfaces welded to be polished to a #4 finish with a maximum roughness finish tolerance allowable of 42 micro inches."

Arc agreed to start work as soon as instructed by Green and to carry on the work promptly, efficiently and at a speed that would not delay Green or its other subcontractors. Any damages for delay by Arc were to be deducted from the price as liquidated damages. Arc agreed to perform all extra work ordered by Blount, or the Corps of Engineers, but Green was not to be held liable to Arc for any extra labor, materials or equipment unless Arc had a written work order from Green.

Gordon told Knief, on or about November 2, before the November 1 contract was signed, that he was inserting in the rider the phrase "with a maximum roughness finish allowable of 42 micro inches" to protect Arc, since it was expected that the welds would be polished to the same finish as the rest of the plates, and he (Gordon) had learned—if he did not already know—that a No. 4 finish means in effect a finish not exceeding 42 micro-inches, without pits visible to the naked eye, and he had been told that the Ryerson plates had a finish measuring 42 micro-inches or better.

At the time the August and November contracts were negotiated neither Arc nor Green knew that it would be necessary to remove or fill any considerable number of pits, cracks or crevices. Knief did not intend Arc to assume, nor understand that Arc was assuming by the November 1 contract, any obligation that Arc had not assumed under the August 24 contract except the polishing of the welds. If Gordon intended that Arc assume responsibility for any other polishing, he concealed that fact from Knief.

Upon consideration of all the evidence, and weighing the credibility of the several witnesses, I find that the subcontract between Arc and Green was not intended to require Arc to do the final polishing or any other polishing necessary to create a No. 4 finish, without pits, cracks and crevices on the plates furnished by Ryerson.

(6) *November 1956 to February 1957-Delivery of Plates, Letters and Discussions in re Finish.*

On November 1, 1956, representatives of the Chemical Corps (Using Agency) and of Green met at Ryerson's plant in Philadelphia to make an unofficial examination of the polished plates which were there awaiting shipment to the job site. Measurements made at the plant of areas approximately 3 feet square on two plates indicated a surface smoothness of 42 micro-inches or better However, six pieces cut from strips sheared from the plates were taken away by representatives of the Using Agency and subsequently measured; these strips showed a surface smoothness ranging from 24 to 63 micro-inches.

On November 7 representatives of Blount, Green, the Corps of Engineers and the Using Agency met at Fort Detrick. The Using Agency indicated that it had originally expected the surface of the cloud chambers to be smoother than indicated by the measurement of some of the pieces of sheared strips obtained at the Ryerson plant on November 1. Gordon, on behalf of Green, insisted that there was no micro-inch standard applicable to a No. 4 finish, and that if Green were required to polish to a definite micro-

inch measurement, the additional polishing would be claimed as an extra. The Using Agency finally told the Corps of Engineers that it did not consider a finish of 42 micro-inches to be a No. 4 finish, but that a maximum of 42 micro-inches would meet its needs. The Corps of Engineers decided to make no change in the contract requirements, and no change was ever made.

On November 13 Green told Blount that the Ryerson steel was "equal or superior to a stock No. 4 finish of the U. S. Steel Corporation" for stainless steel plate. Gordon also told Blount that a guaranteed 42 micro-inch finish on plates and welds could be given for $54,000. This offer was orally reported by Blount to the Corps of Engineers. The Corps told Blount that the offer was not acceptable and that the price was entirely too high. Blount reported this to Green.

On November 19 Green forwarded to Blount a letter from Ryerson stating: "The plates have been polished to a standard #4 finish * * * by comparison of finish standards as used by Allegheny-Ludlum Steel Corporation, who produced these plates, and standards observed by other mills such as U. S. Steel Corporation, we represent these plates to be fully equivalent, or perhaps superior to the competitive plates indicated". Blount communicated the substance of this letter to the Corps of Engineers, and on November 23 the Corps told Blount that if the finish on the plates was equal to U. S. Steel Corporation's stock No. 4 finish, fabrication of the cloud chambers should proceed. Blount reported this conversation to Green by telephone and confirmed it by letter.

On November 23 the plates, covered with adhesive paper and boxed in crates, were delivered to the job site. They were unloaded by Arc, using labor and a crane supplied by Blount and paid for by Arc, and were placed on a platform which had been built by Blount for Arc. The plates were not uncrated at the time and the Corps did not inspect them before it told Blount on November 23 that fabrication of the cloud chambers with the Ryerson plates should

proceed if the finish thereon was equal to U. S. Steel Corporations' stock No. 4 finish.

The surface of the stainless steel plates delivered by Ryerson varied in smoothness from under 42 micro-inches to over 75, nearly 100 micro-inches. Most of the plates also had many deep pits, which would have been visible to the naked eye if they had not been covered with paper. They could not properly be said to have a merchantable No. 4 finish.

On November 26, Green wrote Blount a letter which recognized that the Corps of Engineers had concluded not to require any specific micro-finish requirement for the finish, but insisted that further efforts be made to obtain from the Corps a specific finish standard for the welds.

On December 10 Blount sent the Corps six notarized copies of Ryerson's November 15 certification and asked the Corps to inspect the plates at the job site and accept them as meeting the "specifications and the amplifying letter written by Col. Chapman on May 14, 1956". Blount also asked for an agreement on "what constitutes an acceptable #4 finish on welds", and suggested that "we determine the roughness range, in micro-inches, on the plates at the job site at this time and use that as a basis for determining whether a weld is acceptable or not". In response to this letter a meeting was held at Fort Detrick on January 2, 1957, at which the Corps of Engineers requested the Using Agency to furnish a sample of a finish acceptable to it, and Blount requested, in turn, that it be given such a sample.

On February 4 the Corps of Engineers sent Blount a letter together with a small piece cut from one of the pieces of sheared strip that the Using Agency had brought back from the Ryerson plant on November 1, 1956. The letter from the Corps to Blount stated: "The sample is furnished only as a guide of the desirable finish to be obtained in the Cloud Chambers". The sample had a surface smoothness of 35 to 41 micro-inches as measured by a Brush sur-

face indicator, and had been selected because it was free of all pits. Blount made a visual comparison of this sample with some of the plates at the job site and obtained a micro-inch measurement of the sample, by use of a profilometer, which showed an average roughness of 45 micro-inches.* Thereafter Blount retained the sample, but showed it to Clare, Green's Assistant Project Engineer, who was then Green's representative at the job site, and it was available to Green at any time if Green had asked to see it again.

On February 20 Green wrote to Blount requesting a further specification of the finish and again indicating that if 42 micro-inches were specified an increase in price would be involved. On the same day Blount advised the Corps of Engineers, by letter, that the surface of the plates at the job site appeared on a visual inspection to be equal to or better than the sample which the Corps had sent as a guide, inquired whether the Corps desired to specify a definite micro-inch requirement, and pointed out that if they did an increase in price would be involved.

On February 27 the Corps of Engineers replied, by letter, stating:

> "As mentioned in your letter, the specifications do not refer to a micro inch measurement. Insofar as known to the writer, there is no relation between a No. 4 finish and a micro inch measurement. The provision of a No. 4 finish as specified in the contract documents is the responsibility of the contractor.
>
> "Since you have been able to obtain a certificate from the Ryerson Steel Company stating that the finish on the stainless steel sheets is No. 4, I see no reason for delaying the construction of the Cloud Chambers.

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* Some measurements referred to in the evidence were made with a profilo-meter and some with a Brush surface-finder or analyzer. These devices ordinarily do not give exactly the same reading, the profilo-meter ordinarily running higher, but the differences are not material for the purposes of this case.

"There is no desire at this time on the part of the Corps of Engineers or the Using Agency to modify the contract to include the measurement of the stainless steel finish in terms of micro inches."

A copy of this letter was shown to Green's representative on the job site who had written Green's letter of February 20, 1957.

On February 28 Blount replied to Green's letter of February 20, and advised Green that "the Corps of Engineers and the Using Agency do not wish to modify the contract to include any additional finish on the cloud chamber plates", and therefore, "since we have notarized statements supporting our claim to a #4 finish, we have given the Corps of Engineers the material required under the contract specifications and I feel there is no further point in pursuing this item any further."

(7) *December 1956 to February 1957-Sigma Process Welding, Spacing, Warpage and Buckling.*

The general contract specifications required that the heliarc process be used for welding the plates together to make the walls and baffles. Before the welding was begun, Green suggested that the sigma process be used rather than the heliarc process; Arc concurred in the suggestion, and permission to use the sigma process was obtained from the Corps of Engineers.

On December 26, 1956, Arc began welding the plates and fabricated the north wall of B Chamber, at a cost of approximately $2,800, using no copper backing bar to disseminate the heat of the welding, because its use was then forbidden by the Architect, who feared copper contamination of the welds. Knief did not think that it was necessary. At first arc spaced the plates for this wall 1/8", apart, which is the proper technique for welding plates 3/16" thick, but,

on instruction from Green and Vitro[5] reduced the space between the plates to 3/64", as required by Green's shop drawings. Arc warned Green and Vitro that this would cause buckling and warpage of the wall, but proceeded as instructed to use a 3/64" spacing and the sigma welding process. As a result of the narrow spacing and the heat generated by the welding, the plates of this wall expanded and buckled so badly that it was necessary to saw the wall apart and reweld. Acting upon the recommendation of a welding expert from Allegheny-Ludlum, Green requested and received permission to return to the use of the heliarc welding process and to use a copper backing bar on the back of the welds. Green also permitted Arc to widen the spacing between plates to 1/8". No warpage and buckling was encountered thereafter. The warpage and buckling of the north wall of B Chamber was not caused by negligent welding or any other negligence on the part of Arc.

During January and February, 1957, Arc sawed open the welds or seams of the north wall of B Chamber and reconstructed it at a cost of $1,891.05.

(8) *Polishing the Welds.*

After the buckling and warpage had been corrected, Arc proceeded to polish the welds. This was done by grinding the welds with coarse abrasives, and then polishing them with a 120 grit belt. The use of the 120 grit belt produced a surface smoothness on the welds of 33 to 38 micro-inches. On January 5, 1957, the Using Agency checked the surface of the polished welds with a Brush surface analyzer and found that the final use of 120 grit would produce a finish below 42 micro-inches.

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[5] Vitro was a firm of architects and engineers employed by the Corps of Engineers to design the cloud chambers and to render other architectural and engineering advice to the Corps of Engineers. However, all of the contracts named the Corps of Engineers as the Architect and Engineer.

(9) *Paper Removal.*

Gordon told Knief that the steel plates would be covered by a standard type of adhesive paper. Removal of the protective paper covering on the plates would ordinarily have been incidental work necessary before the testing called for by all the contracts could be done.

Although strippable protective paper was available, Ryerson or Allegheny-Ludlum had covered the mill-polished surfaces of the stainless steel plates with a heavy manila paper, using as an adhesive a rubberized or latex glue, which was impervious to water and to most solvent materials and was very hard to remove. This difficulty became progressively worse during the construction of the cloud chambers, especially as the weather grew warmer in the spring. Except for a few places where a square foot or so could be pulled off in one operation, the removal of the paper and the adhesive required hand scraping with plastic or soft wood scrapers for about half of the area, and for the other half grinding it off with coarse 36 grit abrasive.

(10) *January 1957 to April 1957 and Beyond-Grinding and Polishing the Plates, Including Burned Spots from Tack-Welding.*

After Arc had completed its first fabrication of the north wall of B Chamber, Arc turned the wall over on January 5, 1957, and observed, in addition to the warpage and buckling, that each tack-weld along the structural steel channel flanges, applied as prescribed by Green's shop drawings, had caused a "burned spot" on the surface of the plate (*i.e.* a discoloration and destruction of the mill-finish) about 1" x 1½" in size. Similar spots were caused later by welding the V-bars and stiffeners to the baffles. Similar spots were also caused by welding to the back of the plates the "dogs" which held the copper backing bar, suggested by Allegheny-Ludlum and approved by Arc, Green, Blount and the Corps of Engineers. These

spots were not caused by the presence of the paper nor by any negligence on the part of Arc. No engineer connected with the Corps of Engineers, Blount or Green, ever objected to Arc's method of tack-welding.

It was necessary to remove the spots to restore the finish on the plates. Arc voluntarily polished a few of the spots to see what was involved, but did not undertake to polish all of the spots until Green, per Gordon and Clare, had promised to pay him for doing so. At the direction of Green and Blount, Arc undertook to remove these spots by polishing with 120 grit abrasive. Such spot polishing was found to produce scratches on the finish of the plates in the areas surrounding the burned spots.

By this time it had become apparent that the plates as delivered by Ryerson did not have a No. 4 finish and had thousands of deep pits and tens of thousands of smaller pits scattered over their surfaces.[8] Blount insisted that Green was bound to comply with the specifications and to perform any polishing necessary to bring the surface of the plates to a No. 4 finish without pits, cracks, and crevices, and that Arc as Green's subcontractor should do the necessary polishing. Arc declined to do this overall polishing unless Green would agree to pay for all polishing (except the polishing of the welds) as extra work over and above Arc's contract with Green. After some discussion Gordon orally agreed that Green would pay for this polishing as extra work, and repeatedly insisted that Arc proceed with the work and send Green the bills, which Green forwarded to Blount as part of Green's claim against Blount. Arc knew that Green was doing this. From time to time Gordon would tell Arc not to do any extra work without a formal order, which he never supplied, all the while insisting that Arc get on with the work as speedily as possible.

On March 13, 1957, Arc began to polish the entire surface of the plates of two walls of A Chamber. There were

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[8] See letter from Green to Ryerson dated June 7, 1957, in Ultimate Finding (11), *infra*.

numerous pits, scratches and dents in the surface of the plates. Some of these scratches and dents resulted from the paper removal and a few resulted from other damage inflicted on the plates while at the job site. A very large number of pits—some 6,700 large pits and many times that number of small pits—had been in the plates when they were shipped by Ryerson. Arc first filled the deep pits with welding metal, ground the larger pits with coarse abrasives (36 to 100 grit), and then polished the entire surface of the plates with a 120 grit belt. After completion of this process, the plates frequently still had pits and scratches which were visible to the naked eye. Some of these pits had been uncovered in the grinding and polishing process. Any such pits and scratches remaining on the surface were then removed by further filling, grinding and polishing. This work usually resulted in a surface smoothness of about 33-38 micro-inches, but Arc did no more polishing than was necessary to achieve a No. 4 finish.

All of this polishing was done by Arc by the use of hand tools or machine tools without the use of a lubricant. Although lubricants are used for polishing in the mills, and Arc's failure to use a lubricant may have developed some pits, it also saved time. I find that the total cost of grinding and polishing was not increased by the failure of Arc to use a lubricant, and that Arc did the grinding and polishing in a workmanlike manner, using reasonable skill and care under all the circumstances.

On April 3 a meeting was held at Fort Detrick at which representatives of the Corps of Engineers and the Using Agency, at the request of Blount and Green, inspected those two walls to determine whether the surface finish then on those walls was acceptable. Representatives of Arc, Green and Blount were present at this inspection. The Corps of Engineers stated that the surface was acceptable provided the pits and scratches visible to the naked eye were removed by a final polish. In order to accomplish this, Arc was required to do some additional grinding and to repolish the entire surface with 120 grit.

The requirement of the Contracting Officer that pits and scratches visible to the naked eye be removed was a reasonable interpretation of the specification calling for "a No. 4 finish without pits, cracks, or crevices".

(11) *Letters and Claims after April 3, 1957.*

After the meeting on April 3, 1957, Green continued to demand further specification of the finish and polish requirements and represented to Blount and the Corps of Engineers that Arc was unable to proceed with the polishing because of uncertainty as to those requirements. At Gordon's insistence and because Green was withholding money due Arc, Knief wrote a letter making that representation to Green. Green's demands were made for the purpose of obtaining a direction from the Government or Blount requiring a specific micro-inch finish, with the intention of making a claim for extra work if such a direction could be obtained. In fact, Green knew what polishing was required in order to produce a finish which the Government would accept. No delay was caused in the performance of the contract by any uncertainty on the part of either Arc or Green on this point.

On June 7, 1957, Green wrote Ryerson as follows:

> "Upon removal of the protective paper from the polished surface we find pits or crevices in the metal of these plates. In completing our contract, it is required that all cracks and crevices be removed in the final polish. Some of these holes are very small and some are as large as the head of a pin and as deep as 1/32". In order to remove these pits, our contractor has had to weld them shut and grind and repolish the surface. This has caused considerable extra work for our contractor, Arc & Gas Welder Associates, Baltimore. Their contract with us calls for grinding and polishing of the weld area. These pits occur most anywhere in the plates.

"* * * These pits have occurred in most every plate that has been used so far."

Meanwhile, in May 1957, Arc had requested Green to make progress payments then due Arc and to make payment for the extra work done by Arc in polishing the surface of the plates. When Green refused to make such payments, Arc demanded arbitration. Upon Green's continued failure to pay or to agree to arbitration, Arc threatened to stop work on Friday, June 14. Knief told Blount that Arc was stopping work primarily because of Green's failure to make adequate payments on account, but that Arc felt that the polish requirements of the specifications should be further clarified. Blount agreed to press Green to bring its payments up to date and to seek further clarification of the finish requirements from the Corps of Engineers, upon the representation of Knief that Green was uncertain as to what those requirements were.

On June 24 and June 28, 1957, the Corps of Engineers wrote Blount, referring to previous letters and conferences, and saying (June 24): "* * * it is difficult to see how the specification can be further clarified", and (June 28):

"The intent of Section 8-06 f (3) & j, to which you referred in our conversation of this date is to obtain Cloud Chambers having a #4 finish unblemished by scratches, pits, or crevices * * * Assuming the plates to have been free of imperfections on shipment, the object of the final polish is therefore to restore the plates to the original #4 finish as produced by the mill.

"Approval to proceed with construction of the cloud chambers * * * was based on a notarized statement from the Ryerson Steel Company certifying the stainless steel plates to be a #4 finish as produced by that company. Surface imperfections that may have remained after this mill finishing, and accumulated im-

> perfections resulting from packaging, shipping, fabrication and erection are to be removed by a final polishing."

Copies of these letters were forwarded by Blount to Green. Green thereupon wrote to Blount:

> "This letter is to put you and the Government on notice that each day since April 1, 1957 additional polishing over and above the contract specifications is being done during the fabrication and erection of the Cloud Chambers by our subcontractor, Arc & Gas Welder Associates.
>
> "Our basis for doing this extra polishing is in compliance with Major Murray's letter of June 28, 1957".

from which Green quoted the portions set out above.

On August 13, 1957, Arc filed a claim with Green for extra work claimed by Arc to have been done by it in polishing and grinding the plates from the beginning of the job to July 31. This claim included all grinding and polishing that Arc claimed to have done during the period up to July 31 except the grinding and polishing of the welds.[7] Thereafter, five monthly statements were rendered by Arc to Green claiming payment for all of Arc's grinding and polishing of the welds. These bills purported to show the man hours spent on extra work over and above Arc's contract, specifying the nature of the work and the particular wall involved. They listed the total man hours for each class of labor, multiplied by the hourly rate, resulting in a total labor cost. To this was added 7½¢ per hour for "health and welfare fund", $1,000 a month for Knief's time as superintendent, 40% of the "travel time" paid by Arc to its laborers, 15% for overhead on all items

[7] On April 1, 1957, Gordon had asserted against Blount a claim for extra work up to March 31, 1957, in the amount of $34,689.87, which included Arc's additional polishing up to that time, as estimated by Arc.

except Knief's salary, 5% profit, and 40% of usable material costs.

These statements were forwarded by Green to Blount with letters in which Green contended that they were for extra work not covered by the contract between Green and Blount. Green added 15% for Green's overhead and 10% for Green's profit to each of Arc's claims.

Blount forwarded these claims to the Contracting Officer. A typical forwarding letter said: "Inasmuch as we are the General Contractor, we assume that the enclosed revised proposal is submitted in our name and we would, of course, expect to add our usual percentage to this amount as it is computed in its entirety."

Neither Green nor Blount ever questioned the amount of these bills, any item contained therein, or the manner in which they were calculated until the summer of 1959, more than a year after the bills were rendered, except that on July 3, 1958, when Green tendered Arc's total claim, it stated: "We neither endorse nor deny this claim nor do we make any commitment as to its validity; but enclose without comment". Blount replied on July 31, 1958, as follows: "As you know, this claim was presented to us through your Company and was appealed to the Corps of Engineers' claims and Appeals Board at your request. You also added to such claim certain costs of your own and an allowance to you for overhead and profit. In your earlier letter, you have always unequivocally insisted that the Arc & Gas Welders' claim is meritorious. You have never before indicated that you did not endorse and support such claim." During the trial of the case, however, Arc modified its claim several times, reducing the number of hours shown on the various monthly statements.

On January 10, 1958, the Contracting Officer forwarded to Blount a formal written decision finally rejecting Green's claims for extra work.[3] Green requested Blount to appeal

[3] The "Plate Claim", see II.(A)(2), *infra*, and the "Polishing Claim", see II.(A)(3), *infra*.

this decision to the Chief of Engineers, as permitted by the provisions of the general contract; such an appeal was taken and is presently pending. Thereafter, Green requested that its counsel be given full authority to conduct and prosecute the appeal proceedings, to which Blount agreed, on conditions designed to keep Blount informed.

(12) *Work Orders and Waiver.*

No formal request for a contract modification or extra work order for polishing was ever made by Knief.

However, the extra plate polishing work performed by Arc was ordered by Green orally, and Green promised to pay Arc therefor before Arc did the work. Numerous writings sent by Green to Arc—letters, progress reports with schedule of future work, and copies of letters passing between Blount and Green—confirmed those written orders.

Moreover, from time to time Green ordered Arc to perform 17 separate items of extra work (in addition to the disputed items sued for in this case) for which Green paid Arc a total of $12,137.53. For five of the 17 items and part of a sixth, formal written work orders were given Arc by Green before the work was done. One item was ordered by letter and a formal work order given after the work had been done. Two items were ordered orally and formal work orders given after the work had been done. Eight items and part of a ninth were done by Arc on oral orders from Green, with no written orders, formal or otherwise, at any time, and Green paid Arc $8,282 for those items. The work on these nine items was done by Arc at various times between January 10, 1957, and December 31, 1957; bills for these items were sent by Arc to Green on various dates between May 17, 1957, and January 20, 1958, and were paid by Green to Arc on various dates between July 29, 1957, and February 20, 1958. All of the items represented extra work made necessary by the fault of Ryerson or Richmond Engineering Co., suppliers or sub-subcontractors of Green, who gave Green credit or reimbursed Green for the amounts Green paid to Arc for these items.

FINDINGS OF FACTS AND CONCLUSIONS OF LAW ON THE SEVERAL CLAIMS

I. (A) Arc's Claims against Green

(1) *For the retained percentage.*

It is conceded that Arc has a valid claim against Green for this item in the amount of $5,364.85.

(2) *For additional work.*

(a) *Minor items.* It is conceded that Arc has a valid claim against Green for repairing defective quarter rounds ($864), and for grinding V-bars ($1,696.80), a total of $2,560.80.

(b) *Grinding and Polishing the plates, including paper removal.*

The first question to be decided is whether the November 1, 1956, contract between Green and Arc was ambiguous with respect to the extent and kind of polishing Arc was required to do. Everyone concedes that the contract required Arc to polish the welds. Arc contends that the contract did not require it to do any other polishing. Green contends that the contract required Arc to do the final polishing and all other polishing called for by Green's subcontract with Blount.

The polishing which is in dispute includes:

(Class A)—Grinding and polishing made necessary by the defective condition of the plates furnished by Green,

(i) because the number and depth of the pits and other defects in the plates when delivered by Ryerson prevented them from having a merchantable No. 4 finish;

(ii) because the plates were covered with an unusual kind of adhesive paper, the removal of which necessarily resulted in many scratches and developed additional pits.

The contract clearly did not require Arc to do the grinding and polishing necessary to correct these Class A con-

ditions, which were the fault and responsibility of Ryerson and Green. See particularly Green's letter to Ryerson, June 7, 1957, quoted in Underlying Facts (11), *supra*..

(Class B)—Polishing made necessary by

(i) Arc's own work, principally the burned spots caused by the tack-welding and welding of the dogs;

(ii) Damage to the plates while stored at the site or in place, caused by Green, by other subcontractors, or by Blount.

Of course, if the burned spots or other conditions requiring polishing had been caused by negligence on the part of Arc, Arc would have been obligated to correct the conditions or pay for their correction. Since Arc was not negligent in its tack-welding or other welding, or in its care of the plates, this point does not require any further discussion. We are concerned only with burned spots, scratches and other conditions not caused by negligence on the part of Arc, but resulting from the nature of Arc's work or from the acts of others.

The November contract admittedly did not require Arc to do all of the polishing required by the specifications; Green concedes that under its contract with Ryerson and Ryerson's order from Allegheny-Ludlum, the mill was supposed to do the initial polishing to bring the plates to a No. 4 finish. The word "polishing" in the body of the November contract did not mean all polishing, and we must look elsewhere—to the rider—to see what polishing was meant. The rider refers only to the polishing of the welds, and there is no mention in the November contract or rider of "final polishing".

The contract does not clearly and unambiguously require Arc to do the final polishing, or any polishing except the polishing of the welds. Taken most favorably to Green, it is ambiguous on this point. It will make no difference in the result whether or not the contract be construed as clearly not requiring Arc to do any polishing except the

polishing of the welds, because after considering all the facts and circumstances, I have found that Arc did not undertake by either the August or the November contract to do any polishing except the polishing of the welds. See Underlying Facts (5), *supra*.

When the burned spots caused by the tack-welding developed, Green ordered Arc to remove those spots by polishing and promised to pay Arc for that work. It shortly became apparent that such spot polishing would be futile, principally because (1) the rough finish of most of the plates as delivered by Ryerson, and (2) the removal of the paper and the latex adhesive, made an overall polish necessary to create a No. 4 finish, without pits visible to the naked eye, let alone a "No. 4 finish without pits, cracks and crevices". See Underlying Facts (10). Green ordered Arc to do this overall polish under directives which, in the light of all the circumstances, waived the requirement of a formal extra work order and obligated Green to pay Arc for any and all of the polishing not already required of Arc by the November 1 sub-subcontract.

Green contends that Arc's claim for this extra work is barred because Arc did not obtain a written work order from Green therefor, as called for by the contract between Green and Arc. Green relies on *Abbott* v. *Gatch*, 13 Md. 314, 331, where the court said if "one party omits to have the changes reduced to writing, they must, in view of the rights of the other, be deemed to have been made with reference to the contract price, unless there be proof of an express waiver of that clause of the contract, or a promise to pay for the extra work". In the instant case I have found, Underlying Facts (10) and (12), that Green promised to pay for the extra work. The most recent Maryland case not only reaffirmed the obligation to pay when there has been both an oral order and a promise to pay, but held that such a provision can be waived by implication or by course of dealing, as well as by an express waiver. *Freeman* v. *Stanbern Construction Co.*, 205 Md. 71, 79. See also

Ross Engineering Co. v. *Pace*, 4 Cir., 153 F.2d 35, 49; *Benson* v. *Borden*, 174 Md. 202, 219; *Wright* v. *Wagner*, 182 Md. 483, 490. The payments made by Green to Arc for extra work done by Arc on Green's oral orders, set out in Underlying Facts (12), were made after Arc began the extra polishing work, and so do not constitute a course of conduct which would allow Arc to claim that Green is estopped to set up this defense; but the payments are evidence to be considered with all of the other facts in deciding whether Green waived by implication the written order requirement with respect to the extra polishing.

If we were dealing with the polishing of the burned spots on the plates and baffles as an isolated item, it would be a close question whether such polishing was required of Arc by its November contract with Green. Even so treated, I would find, upon a consideration of all of the evidence, that it was not covered by the November contract. Under the facts of this case, however, not only would the polishing of the burned spots on the plates and baffles (once over with a 120 grit) have been a comparatively minor item, the polishing of the burned spots alone would have been futile. The defective finish on the plates as delivered and the removal of the adhesive paper made it necessary to grind and polish the entire surface of almost all the plates, using various coarse grits, filling some pits with weld metal, finishing with 120 grit, and going over a large number of the plates a second time. This grinding and polishing was not the responsibility of Arc under its subcontract, but was caused by the failure of Green and Ryerson to supply plates with a merchantable No. 4 finish, covered with a proper adhesive.

Under these circumstances, it would not be fair to deduct from the amount Arc is entitled to recover for grinding and polishing any amount to cover what the polishing of the burned spots would have cost. This conclusion is fortified by my decision that Arc's claim for extra polishing should be limited to Arc's actual costs, plus a modest al-

lowance for overhead and profit, rather than the larger amounts claimed by Arc (a) on the theory of account stated or executory accord, or (b) as the reasonable value of such work, based upon various estimates.

Arc contends that the bills which it sent to Green from August 1957 to January 1958, see Underlying Facts (11), represent an account stated or an executory accord within the rules stated in Corbin on Contracts, sec. 1303 *et seq.*, esp. 1312. See also Williston on Contracts, rev. ed., sec. 1862, *et seq.*; A.L.I. Restatement of Contracts, sec. 417, 419, 422. The facts, however, do not support this contention. It is true that Green passed the bills on to Blount as part of Green's polishing claim, adding 15% for Green's overhead and 10% for Green's profit, and that Green did not object to the amount of Arc's claim nor to the items included therein. Blount, in turn, passed the claims on to the Government. But, although Green had originally ordered the work and promised to pay Arc for it, at the time the bills were submitted Green was disputing its liability to Arc for the extra polishing. Arc knew this and knew that Green was taking the position that it was passing the bills on to Blount and the Government as part of Green's claim for extra work, based on the alleged uncertainty of the specifications, which Gordon had persuaded Knief to support. Some of Gordon's methods were not commendable, but under all the circumstances it would not be fair to say that Green's failure to object to the individual items in the bills resulted in an account stated or an executory accord. *Chinn* v. *Lewin*, App.D.C., 16 F.2d 512; and authorities cited above, especially Corbin, sec. 1312, p. 203; Williston, sec. 1862, p. 5228. Moreover, Arc now admits that the hours shown on the bills were inaccurate.

The court should consider, however, that Green and Blount never suggested to Arc that the method of calculating the bills was wrong, that the hourly rates were wrong, or that the charge of $1,000 a month for Knief's supervision was not justified.

Arc polished about 13,437 sq. ft. of plate surface outside the weld areas, an average of one and one-half times, using three passes with different grits. It is difficult to separate the time required for removing paper and adhesive from the time spent in grinding and polishing the surface of the plates, but the paper removal probably consumed about one-third of the time Arc spent on this additional work. Arc's records showing the time spent on this work are not satisfactory, and its adjusted estimate of 9,478 hours is not accurate. I find that Arc spent about 7,714 labor hours doing such polishing and paper removal. Foreman's time, travel time, indirect labor, materials and other expenses should be apportioned 35% for this extra work and 65% for work covered by the contract and other extra work separately billed.* Using the labor rates actually paid by Arc, it costs for the foregoing items total $46,255.69. This figure does not include any charge for Knief's time. Arc had no other business except this particular contract. Knief, who was the sole stockholder of Arc, had expected to continue his other business activities in Baltimore, to have a competent welding foreman on the Fort Detrick job, and to devote relatively little of his own time to the work. However, because of the polishing problems, Knief was required to devote more than a year, essentially full time, to the job. Arc is entitled to include in its costs reasonable compensation for Knief's time, although Arc has not been able to pay Knief because Green has not paid Arc for the extra polishing work. Knief's time was reasonably worth $15,000 a year, but he would have had to devote a small amount of time to the work covered by the November contract. All factors considered, it is reasonable to allow Arc $1,000 a month for twelve months, a total of $12,000, for Knief's time spent in supervision of the extra polishing work, and to allow for over-

* The [illegible] as apportioned total $9,314.14. The [illegible] for attorneys' fees should not be [illegible] in the same amount or proportion.

head and profit 10% of Arc's other costs for that extra work, *i.e.* 10% of $46,255.69, or $4,625.57. If, as defendants contend, a somewhat smaller allowance should be made for Knief's time a larger amount should be allowed for overhead, so the result would be essentially the same. Adding these two items to the $46,255.69 gives a total of $62,881.26, which should be allowed Arc for the extra polishing and paper removal.

This is considerably less than the amount which the witness Sam Tour testified would be the reasonable cost of doing the work. He testified that in his opinion the time required to do the job would reasonably run 8,437 hours and that a reasonable hourly charge, including 15% for overhead and 5% for profit, which he also said was reasonable, would be $8.93, a total cost of $75,342.41. Plaintiff contends that it should be allowed at least this amount as representing the value of the work to defendants, citing, *inter alia*, A.L.I. Restatement of Contracts, sec. 347; Williston on Contracts, rev. ed., sec. 1479 *et seq.*; Corbin on Contracts, sec. 1112; *Rodemer* v. *Hoylehurst*, Md., 9 Gill 288. Although I accept the testimony of the witness Tour, his estimate was necessarily based on certain assumptions he was asked to make. There are a number of factors in this case which persuade me that Arc's actual expenses, including its claimed allowance of $1,000 per month for Knief's time, plus a reasonable allowance for overhead and profit, is the fair measure in this case. For one thing, Arc had little overhead; Knief was the whole organization. For another, the cost of the work is always to be considered in measuring reasonable value, although it is not the sole measure. Williston on Contracts, sec. 1483.

Interest

The construction of the cloud chambers was substantially completed on Janary 4, 1958. Almost all of Arc's work was done in 1957. There was no excuse whatever for Green's withholding progress payments from Arc or for

Green's failure to pay Arc a reasonable amount on account of Arc's extra work as the work progressed. All facts considered, Arc should be allowed interest at 6% per annum on its total claim from January 4, 1958. *Robert C. Herd & Co.* v. *Krawill Machinery Company*, 4 Cir., 256 F.2d 946, 952.

Arc is therefore entitled to recover from Green

(1)	Retained Percentage	$ 5,364.85
(2a)	Minor Items	2,560.80
(2b)	Polishing, etc.	62,881.26
		$70,806.91

with interest at 6% per annum from January 4, 1958.

The Claims Based on Warping—Included in I. (A)(2), II.(C), III.(A).

Before signing the August and November contracts with Green, Knief knew or should have known that the shop drawings prepared by Green called for 3/64" spacing between the plates, but he made no protest until after the plates had been delivered and he was about to start the welding. When he did object, Green and Vitro told him to proceed according to the drawings because the plates had been cut with the 3/64" spacing in mind. The narrow spacing, possibly aggravated by the change from heliarc to sigma welding, caused bulging and warping of the welded plates which delayed the job three or four weeks and cost $1,891.05 to correct.[10]

I.(A)(2)—Arc cannot collect the $1,891.05 from Green or Blount because of Knief's delay in objecting to the spacing, and his failure to object to the change in the welding method.

[10] Thereafter, on the advice of Solomon, of Allegheny-Ludlum, the spacing was increased to 1/8", the heliarc method of welding was again required, and the use of copper backing bars was permitted. See Ultimate Findings (7), *supra*.

II.(C)—Green cannot charge Arc for the delay, because the original error was in the shop drawings, which were prepared by Green, and Green took no steps to correct the error until after the warping, which caused the delay, had occurred.

III.(3)—Blount cannot charge Green for the delay because neither Blount nor the Corps of Engineers objected to the shop drawings when they were submitted for approval, and Vitro, representing the Corps of Engineers, acquiesced in the decision to go ahead with the narrow spacing when Arc first called it to the attention of Green and Vitro, and Blount is responsible for Vitro's action vis-a-vis Green.

I.(B). The Claims by Arc against Blount and U.S.F. & G.

(1) It is agreed that Blount and its surety are liable to Arc for a net amount of $639.24 for work done by Arc for Blount not covered by Green's subcontract, less a credit for electricity supplied by Blount to Arc.

(2) Under the Miller Act. 40 U.S.C.A. 2706, Blount and its surety are liable to Arc for the amount found to be due to Arc by Green, namely $70,806.91, with interest from January 4, 1958.

There is no merit in Arc's claim, supported by Green, that Blount is primarily liable to Arc for anything except the items covered by (1) above. Blount never assumed direct liability to Arc for the other items orally or in writing. Arc sent no bills to Blount therefor and made no demand against Blount (except under the Miller Act) until the filing of this suit. It is conceded that Arc gave Blount the notice required by 40 U.S.C.A. 270b(a).

II.(A) The Claims by Green against Blount and the U.S.F. & G.

II.(A)(1) For the Retained Percentage.

Blount holds an unpaid balance of $22,091.82 due Green under the subcontract, subject to any offsets to which Blount may be entitled.

II.(A)(2) The Plate Claim.

The facts underlying Green's "plate claim" are set out in Underlying Facts (1), (2), (3) and (4), *supra*.

On April 1, 1957, Green filed a claim against Blount for extra work, contending that the facts, particularly the May 14, 1956, letter from the Corps of Engineers to Blount and the May 15, 1956, letter from Blount to Green, modified Green's subcontract, required Green to have the polishing done at the mill rather than in the field, and constituted an order for extra work. Green argues that the Government improperly rejected the "pack roll" sample offered by Green and directed Green to supply a finer finish than was required by the specifications, so that Green was forced to change to a more costly method of fabrication.

Since the sample had many pits, cracks and crevices and was not a No. 4 finish, the Government was clearly justified in rejecting the sample.

Neither the letter of the Corps of Engineers of May 14, 1956, nor Blount's letter of May 15, 1956, altered the requirements of Green's subcontract. See Underlying Facts (4). Neither the Government nor Blount required Green to have the polishing done at the mill rather than in the field.

The interpretation of the specifications by the Architect (in this case the Corps of Engineers) is binding on the parties and is not reviewable by the courts in the absence of fraud, collusion or bad faith. *Merrill-Ruckgaber Co.* v. *United States*, 241 U.S. 387; *United States* v. *United Enterprises*, 5 Cir., 226 F.2d 359; *Hughes* v. *Model Stoker Co.*, 124 Md. 283. There is no evidence of fraud, collusion or bad faith in this case.

At the request of Green its "plate claim" was submitted by Blount to the Corps of Engineers, and was rejected by formal decision of the Contracting Officer on January 10, 1958. At the request of Green, Blount appealed this decision to the Chief of Engineers; that appeal is presently pending. On the evidence in this case, the "plate claim" is

without merit, and Green is not entitled to recover from Blount thereon.

II.(4)(3) The Polishing Claim.

The principal part of this claim represents Green's efforts to pass on to Blount (and the Government) Arc's claim against Green for additional grinding and polishing. Green contends that the Government ordered additional field polishing of the fabricated plates in addition to the finish and polish required by the original contract.

The general contract, quoted in Underlying Facts (1), required that all stainless steel surfaces inside the cloud chambers "be polished to a #4 finish without pits, cracks and crevices".

Green accepted without demur the subcontract embodying these specifications, and ordered plates with such a finish from Armco. There was no trouble about the matter until Gordon took over, canceled the Armco order, and tried to find some cheaper way of achieving a result which would be accepted by the Government. These efforts failed. Neither Gordon nor anyone else at Green made any protest against the letter of May 14, 1956, from the Corps of Engineers, which Green interpreted as "requesting a No. 4 finish comparable to the 'U.S. Steel Corporation's stock No. 4 finish'." Green included this provision in the order which it placed with Ryerson for the plates. Ryerson did not object and did not make any extra charge because of that addition to its bid. The regular or standard U.S. Steel No. 4 finish is no different from that generally regarded by the industry as a merchantable No. 4 finish; it is obtained by final polishing with 120 grit, and has no pits visible to the naked eye. In practice the roughness of its finish, like that of other merchantable No. 4 finishes, does not exceed 42 micro-inches, although, again like other steel mills, U.S. Steel does not advertise or sell on the basis of a micro-inch standard.

It is true that after examining the plates at Ryerson in November 1956 the Using Agency (Chemical Corps) indicated that it desired a better finish than was shown by some of the samples collected at the Ryerson plant (which ran as high as 65 micro-inches and had visible pits) and indicated to the Corps of Engineers that it desired a finish better than a standard No. 4 finish. However, after numerous letters and conferences over a period of three or four months, the Corps of Engineers decided not to change the contract specifications, and the Corps of Engineers told Blount that if the surface of the plates had a No. 4 finish, Blount should proceed with the erection.

Gordon had submitted an estimate of $54,000 for guaranteeing a 42 micro-inch finish. The Government refused to accept this proposal and refused to specify a finish in micro-inches, since it was apparent that Gordon intended to use any change in the specifications as the basis of a claim for extra work. In fact, such a change in the specifications would not have required Green to produce a finish any better than it was already required to supply, namely, "a No. 4 finish without pits, cracks or crevices". As we have seen, Underlying Facts (2) and elsewhere, supra, a merchantable No. 4 finish does not exceed 42 micro-inches in roughness. Green recognized this when it prepared the rider to the November contract with Arc, dealing with the polishing of the welds. The requirement in the specifications that the finish be "without pits, cracks and crevices" made the original requirement even more severe.

Green persisted in its efforts to persuade the Government to change the specifications, but the Corps of Engineers steadfastly refused to do so.

When the plates delivered by Ryerson proved not to have a No. 4 finish without pits, cracks and crevices, and to be covered with a type of adhesive paper which had to be scraped or ground off, Green was obligated by its subcontract to produce or restore a No. 4 finish without pits, cracks and crevices. The sub-subcontract between Green

and Arc did not pass on to Arc this obligation of Green's. Green, therefore, must bear the cost of Arc's additional polishing work and has no right to pass it on to Blount or to the Government.

II.(B) Claim by Green against Blount for Wilful Interference With and Malicious Failure to Convey Certain Information to Green.

Shortly before trial, Green filed an additional counterclaim for $250,000 against Blount, alleging wilful interference by Blount with Green's progress, by orders given to Arc, delay in making progress payments, damage to steel plates at the job site, concealment of information as to the finish and polish required by the Government which was in Blount's possession, arbitrary refusal to supply clear and unambiguous specifications for Green's guidance which were in Blount's possession, and wilful and deliberate refusal to resolve disputes as to work required by the contract, all of which Green claims delayed it in the completion of the contract. The evidence does not support any of these charges.

Green's principal reliance is on the failure of Blount to send Gordon a copy of the letter of February 27, 1957, from the Corps of Engineers to Blount, quoted in Part (6) of the Ultimate Findings, above. However, Blount showed the letter to J. T. Clare, Green's representative at the job site, who had written Green's letter of February 20, which was responsible for the February 27 letter from the Corps, and Blount reiterated the substance of the conversation with Clare in a letter to Green dated February 28. Moreover, Blount showed Clare the sample which had been furnished by the Corps to Blount and it was at all times available to Gordon or any other representative of Green who asked to see it. Green preferred to allow Gordon to develop his unsupported polishing claim. Blount did all it could reasonably be expected to do to obtain clarification of the specifications, as requested by Green, and to pass on Green's claims to the Corps of Engineers.

It is true that Gordon's scheming embarrassed and irritated Blount's representatives; they had no confidence in Gordon's ability to coordinate the job or to be fair in his dealings with Arc, Blount and the Government. Blount had so much difficulty with Gordon on another subcontract between Blount and Green that Blount was forced to cancel that subcontract and obtain a new subcontractor to get the work done. Blount was also irritated because in November 1956 Gordon, on behalf of Green, bid for a job on which Blount was also bidding. Most general contractors are displeased when their subcontractors bid against them. The feeling became so bad that in June 1957 Blount went to New York to try to get Green to replace Gordon on the Fort Detrick job and other Maryland work, but was unsuccessful.

Blount had no malice against Green or Gordon, and was guilty of no malicious or wilful acts or failure to act with respect to Green's work. Moreover, Green did not prove that the alleged wilful or malicious acts caused any delay or damage to Green. This claim is entirely without merit.

II. (C) Claim by Green Against Arc for Delay.

This claim was originally filed against Arc and its surety, but was dismissed with prejudice by Green against Arc's surety during the trial without any payment to Green by the surety. There is no merit whatever in Green's claim against Arc for delay; any and all delays of Arc were caused by defaults on the part of Green or chargeable to Green as between Green and Arc.

III. Claims by Blount Against Green and National.

III. (A) For Delays Chargeable to Green.

Arc commenced work at the job site on December 10, 1956, and for the first few months made little progress for a number of reasons, including: (1) Lack of adequate supervision and coordination of the work by all parties.

(2) Three or four weeks delay caused by the warping and buckling of the plates. See discussion at the end of I.(A)(2), supra. (3) Delay of the Corps of Engineers in deciding whether or not it would modify the specifications. The Corps did not decide to stand on the original specifications until February 1957. This was responsible for most of the early delay, and as between Blount and Green was chargeable to Blount. Thereafter, Green continued its efforts to secure a modification of the specifications, but these unreasonable efforts did not cause any delay because Arc at all times understood what it was supposed to do. (4) The defects in the plates as delivered by Ryerson and the difficulty of removing the adhesive paper. This required grinding and polishing which would not have been necessary if the plates had had a merchantable No. 4 finish when delivered and had been covered with the customary type of adhesive paper.

The Corps of Engineers directed Blount, Blount directed Green, and Green directed Arc to proceed with the erection of the cloud chambers upon the certification by Ryerson that the plates had a No. 4 finish, without making any adequate inspection of the plates which had been delivered, although the Corps of Engineers, Blount and Green all had knowledge of facts which put them on notice that the plates did not have a No. 4 finish free of pits, cracks and crevices.

Blount claims that the grinding and polishing of the plates could and should have been done more quickly. Some delays were caused by the failure of Green to make proper progress payment to Arc. On the other hand, the space in which the work had to be done was narrow and only a limited number of men could work at one time. Blount was in charge of the entire job, responsible for coordination, and for suggesting better means of doing the work. No such better means were suggested by the Corps of Engineers, Vitro or Blount. It is impossible to say with any certainty how much of the delay was caused by

defaults on the part of Green. Blount has not met the burden of proving this claim against Green.

III. (B) For Exoneration and Indemnity Against Arc's Claims.

Under the terms of the subcontract between Blount and Green and the bond furnished by Green and National to Blount,[11] Green and National are obligated to indemnify Blount against any amount which Blount may be required to pay Arc for work required to be done by Green under the terms of the subcontract between Blount and Green. Arc's claim (aside from the retained percentage) is for extra work, principally grinding and polishing, not included in Arc's November 1 sub-subcontract with Green, but ordered by Green or made necessary by the condition of the plates purchased by Green from Ryerson or both; it is quite clear that the work had to be done by Green or by someone on its behalf in order to complete the work called for by Green's subcontract with Blount, as reasonably interpreted by the Contracting Officer, and that as between Green and Blount, Green is primarily liable for the cost thereof. Green and National are, therefore, obligated (a) to exonerate Blount from any liability of Blount to Arc under the Miller Act for Arc's claims against Green in the amount of $70,806.91, with interest, and (b) to indemnify Blount against any payment Blount is required to make on those claims.

III. (C) For Counsel Fees.

The subcontract between Blount and Green contained two provisions with respect to counsel fees:

> "Article VIII—(a) Sub-contractor shall turn said work over to Contractor in good condition and free and clear of all claims, encumbrances or liens and shall protect and save harmless Contractor and Owner from

[11] See Article VIII—(a) of contract, quoted in III.(C) below, and summary of bond, set out in Underlying Facts (3), above.

all claims, encumbrances and liens growing out of the performance of this sub-contract, and Sub-contractor shall at his own cost and expense, (including attorney's fees), defend all suits to establish such claims, and pay any such claims or lien so established."

"Article XIII—* * * (d) Should Sub-contractor default in any of the provisions of this sub-contract and should Contractor employ an attorney to enforce any provision hereof, or to collect damages for breach of the sub-contract, or to recover on the bond mentioned in Article XII, above, Sub-contractor and his surety agree to pay Contractor such reasonable attorney's fees as he may expend therein. As against the obligations herein contained Sub-contractor and his surety waive all rights of exemption."

Throughout this litigation Blount has contended that all of the amounts claimed by Arc against Blount (except the small items resulting in an award to Arc of $639.24 under I.(B)(1) above) are claims growing out of the performance of Green's subcontract with Blount, and are claims for labor, services and materials furnished for use and used in the prosecution of the work covered by the sub-contract between Green and Blount. On the other hand, Green has contended that all of the amounts so claimed by Arc are the primary liability of Blount and that Green and National are not liable to protect or indemnify Blount with respect to any of those items. It was, therefore, necessary for Blount to incur attorneys' fees and other costs to defend against Arc's claims and to assert against Green and National whatever rights of exoneration and indemnity Blount may have.

Article VIII(a) above requires Green and National to indemnify Blount against the reasonable counsel fees and expenses incurred by Blount in defending Arc's Miller Act claim against Blount for work which Green was obligated to do under the subcontract between Green and

Blount, Article XIII(d) entitles Blount to recover from Green the costs incurred in establishing its right to exoneration and indemnity, and would, if Green were liable to Blount for damages for delay, entitle Blount to a reasonable counsel fee for establishing that claim.

Neither provision of the subcontract entitles Blount to collect from Green any counsel fees expended in defending Blount against Green's claims against Blount.

It was agreed at the hearing that the court should determine the question of Green's liability to Blount for counsel fees before Blount offered any evidence with respect to the amount thereof. I will, therefore, arrange for a hearing to determine the amount which should be awarded Blount against Green and National under the principles set out above.

ROSZEL C. THOMSEN
Chief Judge, U. S. District Court

Direction to Enter Judgments

Mr. Clerk:

Enter judgment in Civil No. 11141 in favor of the plaintiff, United States of America, for the use of Arc & Gas Welder Associates, Inc., against the defendants, Winton M. Blount, William H. Blount and Clara B. Blount, partners trading as Blount Brothers Construction Co., and United States Fidelity & Guaranty Company, jointly and severally, in accordance with our opinion heretofore filed, in the amount of Eighty thousand seven hundred seventy-eight dollars and twenty cents ($80,778.20), together with costs. Also, in accordance with our opinion, enter judgment in Civil No. 11142 in favor of Arc & Gas Welder Associates, Inc., against the defendants, The Green Fuel Economizer Company, Inc., and National Surety Corporation, jointly and severally, in the amount of Eighty thousand seven hundred seventy-eight dollars and twenty

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cents ($80,778.20), together with costs. Satisfaction in whole or in part of either of the above judgments shall be credited against the other.

Also, in accordance with our opinion, enter judgment in Civil No. 11141 in favor of United States of America, for the use of Arc & Gas Welder Associates, Inc., against the defendants, Winton M. Blount, William H. Blount and Clara B. Blount, partners trading as Blount Brothers Construction Co., and the United States Fidelity & Guaranty Company, jointly and severally, in the amount of Four hundred ninety-two dollars and forty-eight cents ($492.48).

Also, in accordance with our opinion, enter judgment on the third-party complaint in Civil No. 11141 in favor of Winton M. Blount, William H. Blount and Clara B. Blount, partners trading as Blount Brothers Construction Company, and United States Fidelity & Guaranty Company against The Green Fuel Economizer Company, Inc., and National Surety Corporation, jointly and severally, in the amount of Eighty thousand seven hundred seventy-eight dollars and twenty cents ($80,778.20), together with costs and counsel fees in the amount of Thirty thousand dollars ($30,000).

Also, in accordance with our opinion, enter judgment on the third counterclaim filed by The Green Fuel Economizer Company, Inc., to the third-party complaint in Civil No. 11141 in favor of The Green Fuel Economizer Company, Inc., against Winton M. Blount, William H. Blount and Clara B. Blount, partners trading as Blount Brothers Construction Co., and United States Fidelity & Guaranty Company, jointly and severally, in the amount of Twenty-two thousand ninety-one dollars and eighty-two cents ($22,091.82).

Also, in accordance with our opinion, enter judgment on the first and second counterclaims filed by The Green Fuel Economizer Company, Inc., to the third-party complaint in Civil No. 11141 in favor of Winton M. Blount, William H. Blount and Clara B. Blount, partners trading as Blount Brothers Construction Company, and United States Fidelity & Guaranty Company.

Also, in accordance with our opinion, enter judgment on the counterclaims asserted by Winton M. Blount, William H. Blount and Clara B. Blount, partners trading as Blount Brothers Construction Company, and United States Fidelity & Guaranty Company to the counterclaims of The Green Fuel Economizer Company, Inc., a New York corporation, and National Surety Corporation to the third-party complaint in Civil No. 11141 in favor of The Green Fuel Economizer Company, Inc., and National Surety Corporation.

Also, in accordance with our opinion, enter judgment on the third-party complaint of The Green Fuel Economizer Company, Inc., in Civil No. 11142 in favor of Winton M. Blount, William H. Blount and Clara B. Blount, partners trading as Blount Brothers Construction Company, and United States Fidelity & Guaranty Company.

Also, in accordance with our opinion enter judgment on all counterclaims of Winton M. Blount, William H. Blount, and Clara B. Blount, partners trading as Blount Brothers Construction Co., to the third party complaint in Civil No. 11142 in favor of The Green Fuel Economizer Company, Inc.

Also, in accordance with our opinion, enter judgment on all counterclaims of The Green Fuel Economizer Company,

Inc., to the complaint in Civil No. 11142 in favor of Arc & Gas Welder Associates, Inc.

ROSZEL C. THOMSEN
Chief United States District Judge

TRUE COPY
TEST:

WILFRED W. BUTSCHKY
Clerk

By ARTHUR J. ROBERTSON
Chief Deputy Clerk

[SEAL]

May 13, 1960.